

## ABSTRACT

The invention relates to an evolutionary method for producing catalysts. In a first step (i), components are selected and added to a library of substances. Mixtures of these individual materials are then produced randomly by random selection. In the second step (ii), this first generation of catalysts produced is catalytically tested. Catalyst-optimized materials from step (ii) are physically/chemically characterized for reproducible production in step (iii) and form the basis for a second generation of catalysts. This second generation is produced gradually from the successful materials of the first generation using biological evolutionary method such as crossing and mutation, and subjected to steps (ii) and (iii). For the second and subsequent iterations, the most successful catalysts of all the generations are taken as a basis in each case, the total number of the catalysts being 1 to 50% of the catalysts of a generation. The iterations are continued until no further improvement is observed in the catalytic properties of the materials in terms of activity/selectivity, for the reaction concerned.